Building scheme for MTF

1. Periodic Building Unit

MTF can be built using units of 11 T atoms (one in bold in Figure 1). The T11-unit consists of two 2-fold (1,3)-connected 5-rings and a T atom that makes an additional connection between the 5-rings (the 5-5=1 unit). T11-units, related by pure translations along c, are connected into chains along c. Two chains, related by a mirror plane perpendicular to b (or by a rotation of about 90° about the chain axis), are connected through 4-rings into a “double-chain” unit. Double-chain units, related by a shift of ½a are connected along b, through 6-ring-chairs into the bc layer. The Periodic Building Unit (PerBU) equals this bc layer shown in Figure 1.

Figure 1. PerBU viewed around an axis about 15° inclined with respect to a, and b (top) and along c (bottom).

2. Connection mode:

Neighboring PerBUs, related by pure translations along a, are connected along a through 6-rings and 8-rings as illustrated in Figure 2 on next page.
3. **Projections of the unit cell content:** See Figure 3.

![Figure 3. Unit cell content projected along c (left), and along a (right).](image)

4. **Channels and/or cages:**

The cavity in **MTF** is shown in Figure 4. The **pore descriptor** is added. The connection of the cavities is illustrated in Figure 5. Non-interconnecting 8-ring channels parallel to \(c\) are formed.

![Figure 4. Cavity viewed along c (left), along b (middle), and along a (right).](image)

\(\{1[4^25^86^28^4] \text{[001]}\} \text{ (8-ring)}\)
5. Supplementary information:

*Other framework types containing (modified) 5-rings*

5-Rings can be connected in several other ways. In all cases additional T atoms are needed to build the framework.

In the [INTRO]-pages links are given to a detailed description of a sub-set of framework types that contain (modified) 5-rings (choose: *5-Rings*). There is also a link provided to a summary of the PerBUs used in the building schemes of these framework types (choose: Appendix; Figure 6).